J. EKIN.

Coal Stove.

No. 51,816. Patented Jan'y 2, 1866.

FIG. 1.

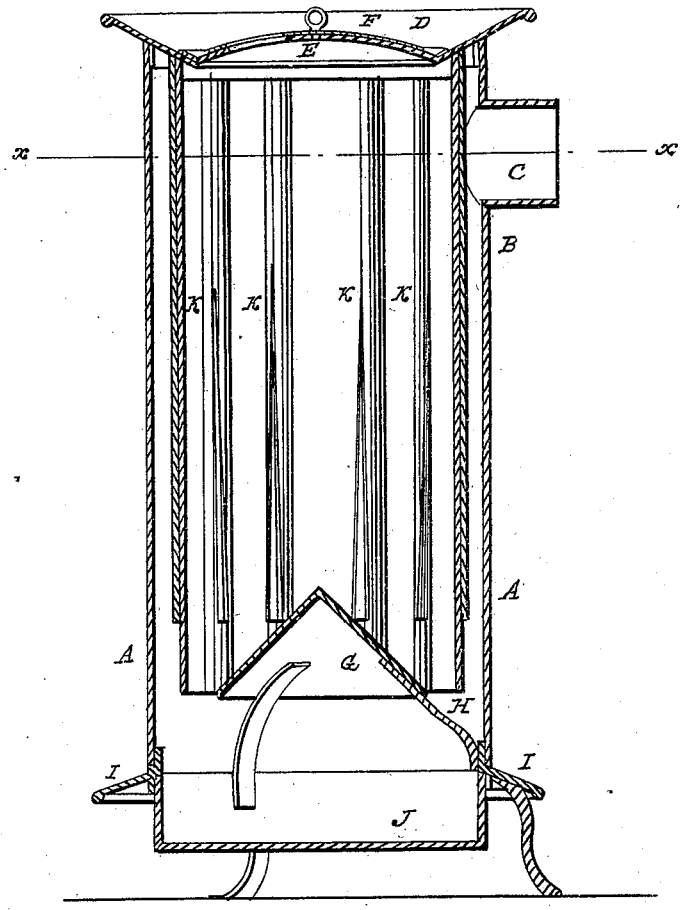
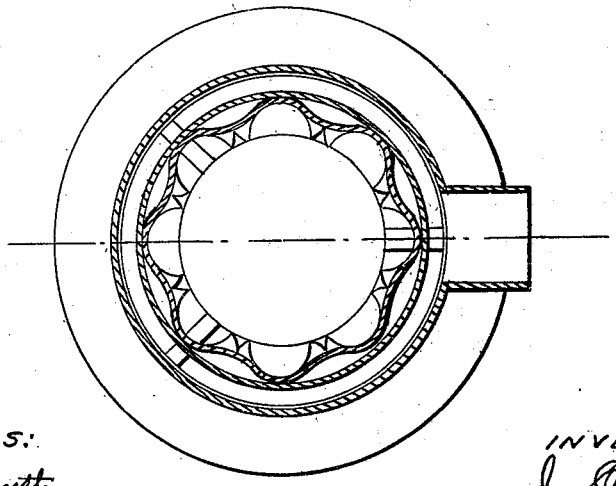


FIG. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN EKIN, OF XENIA, OHIO.

IMPROVEMENT IN COAL-STOVES.

Specification forming part of Letters Patent No. **51,816**, dated January 2, 1866.

To all whom it may concern:

Be it known that I, JOHN EKIN, of Xenia, in the county of Greene and State of Ohio, have made certain new and useful Improvements in Stoves; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a central vertical sectional view. Fig. 2 is a horizontal section on the line *x x*, Fig. 1.

The improvement is in the construction of the fire-chamber, which consists of an inner cylinder, perpendicular grate-bars of peculiar construction, and cone-plate.

The same letters refer to corresponding parts in the different figures.

To enable one skilled in the art to construct and use my invention, I will proceed to describe it.

A is the outer cylinder, and B the inner cylinder, the space between the two being the flue for heating and the escape of gas to the exit-flue C.

D is the top plate, with a fuel-opening, E, and a registered lid or cover, F. The top plate is cast with two circular flanges on its under side, corresponding to the inner and outer cylinders, which are attached thereto. The fuel is admitted at the opening E, and when the lid F is replaced the air is admitted through the registered opening in the lid, and, passing downward through the fuel supports the combustion, which takes place at the base of the inner cylinder, the incandescent fuel resting upon the cone-plate G, which is supported by the legs H, which are stepped into the base I, to which is likewise suspended the ash-pan J. The flange projecting downwardly from the base-plate of the stove affords the means for the attachment of the ash-pan J, which may be secured thereon or supported from beneath by any suitable means. I have found it sufficient to make the relative diameters of the pan and flange such that they will adhere in the manner usual in lids to canisters and circular boxes. The pan may, however, have handles, which, dropping after the pan is attached, form supports by contact with the floor.

The perpendicular grate-bars K impinge upon or approach, at their lower ends, the cone-plate G, and have a convoluted form, as represented. The plate forming the said bars at their upper ends merge into each other, or may consist of a convoluted cylinder; but being divided or slit at the points *k k* the edges are bent toward each other, which causes spaces which constitute the intervals between the grate-bars for the passage of the results of combustion, volatile and otherwise. These intervals increase in width as they descend, and secure the unobstructed passage of ashes and other residuum into the ash-pan beneath. The cone-plate at the bottom of the grate-bars throws the draft, flame, and cinders to the circumference, where the gases and fuel are brought in contact, and the heated results caused to impinge directly upon the outer or radiating cylinder.

The grate-bars may be cast with the cylinders or separately, or they may be constructed of fire-clay. In either case they serve as a lining to the cylinder, and act as grate-bars to detain the fuel until it has been so changed by combustion as to be meet for the chimney or ash-pit.

This construction is adapted for heating or cooking stoves, or for steam-boiler furnaces.

Having described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The combination of the inner cylinder, perpendicular grate-bars, and cone-plate, substantially as described.

2. The flange projecting downwardly from the base-plate of the stove to form a means of attachment for the ash-pan, substantially as described.

JOHN EKIN.

Witnesses:

FRANCIS HARRIS,

LEMUEL BLACK.